



# A Survey of the Perception of Interprofessional Education among Faculty Members of Mazandaran University of Medical Sciences

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## Abstract

**Background:** Interprofessional education is an approach aimed at preparing healthcare staff to provide patients with better services in a participatory atmosphere. As such, interprofessional teaching and learning across healthcare professions is very important. Considering the key role of faculty members in advancing the goals of interprofessional education, the present study sought to examine perceptions among faculty members about the concept of interprofessional education.

**Methods:** This descriptive cross-sectional study involved faculty members of Mazandaran University of Medical Sciences. The interdisciplinary education perception scale (IEPS) was used to collect information. The data were analyzed using descriptive statistics (frequency, mean and standard deviation) and analytical statistics (t-test, Independent t-test and analysis of variance), and  $P \leq 0.05$  was considered significant.

**Results:** The mean perception score of interprofessional education among faculty members was  $3.71 \pm 0.44$ . Although there was no significant difference between the perceptions of female and male faculty members towards interprofessional education ( $P = 0.104$ ), there was a significant difference between the perception of members of different faculties towards interprofessional education ( $P = 0.037$ ). In addition, there were significant differences among faculty members in perception towards interprofessional education ( $P < 0.001$ ) according to their history of educational activity.

**Conclusions:** Considering the positive attitude of faculty members towards interprofessional education in the present study, the readiness of students for interprofessional learning in other studies and the positive implications of this educational approach in different areas of health care, it seems that educational planners in the field of medical education must investigate strategies and remove obstacles to implementation of interprofessional education in order to pave the way for its adoption in this domain.

**Keywords:** Interprofessional Education, Faculty Members, University of Medical Sciences

## 1. Background

Interprofessional education is a pervasive concept in the realm of competency and quality of education for healthcare professionals (1), and is supported by international organizations. In 1973, the world health organization (WHO) warned against the inability of graduates from various medical disciplines to provide effective team care. Accordingly, the WHO offered multi-professional education in order to improve the quality of healthcare. Then, in 1988, it proposed interprofessional education as the most effective strategy for team care (2).

Interprofessional education, as a new approach in the third millennium, has attracted much attention at the international level (3). According to the WHO definition, interprofessional education is a method through which a group of students or learners in different healthcare pro-

fessions assemble at a specific time and place in order to establish interaction and participation to promote learning about healthcare services, with regard to disease prevention, treatment, rehabilitation, and reduction (4). In fact, interprofessional education occurs only when two or more professionals work together to learn about or from each other so that they may enhance the quality of services through increased collaboration (5). Some positive outcomes of this form of education are as follows: enhancing problem-solving skills and clinical decision-making, improving the quality of healthcare, improving patient safety, promoting communication skills, and enhancing the perception of different roles among professionals in healthcare settings (6-10).

Barr, Freeth, Hammick, Koppel and Reeves (2006) conducted comprehensive research on 353 cases of interprofessional education. The results indicated the positive im-

pact of interprofessional education in organizations, especially in the provision of healthcare services (11). A systematic review was conducted by Zwarenstein, Atkins, Barr, Hammick, Koppel and Reeves (1999) to evaluate the effectiveness of interprofessional education interventions. The results found no evidence that interprofessional education has not promoted collaboration or increased the quality of patient-related outcomes (12). Momeni, Ashourioun, Abdolmaleki, Irajpour and Naseri (2011) undertook a quasi-experimental study and concluded that interprofessional education could improve team performance in cardiopulmonary resuscitation (13). Darlow, Coleman, McKinlay, Donovan, Beckingsale and Gray (2015) found that even a brief intervention with interprofessional education had immediate positive effects and led to a positive contribution by healthcare professionals (14).

In sum, most studies show that inter-professional education prepares qualified students to support participatory action in scientific and social environments (15, 16). Although the goal of interprofessional education is to prepare healthcare staff to provide patients with better services in a participatory atmosphere (17), health system professions in the healthcare education system function traditionally and separately and are less willing to work as a team (18). Conversely, the ultimate goal of educating students about the health system is to provide better and more efficient services to patients, and the interprofessional education approach can realize such a goal (19).

To promote teamwork in the health system, it is essential for the healthcare staff to be trained together so that each individual knows his/her role in the team and he/she can function effectively as part of a team in the healthcare system (18). Hence, interprofessional teaching and learning is considered a necessity in the realm of healthcare professions (20). However, this educational approach has been neglected in healthcare education systems and thus needs to be addressed. Students and professors are key components of interprofessional education and their readiness is important and essential for interprofessional education. In Iran, several studies have examined student readiness for interprofessional learning in universities of medical sciences. However, readiness for interprofessional education among faculty members has been underestimated. Given the essential role of professors in promoting the goals of inter-professional training as facilitators (20), the present study aimed to investigate the perception and level of readiness of professors of Mazandaran University of Medical Sciences toward inter-professional education. By examining the status quo, it may be possible to take a step towards the planning and implementation of interprofessional education.

## 2. Methods

This descriptive cross-sectional study was conducted in 2016. The study population consisted of faculty members of Mazandaran University of Medical Sciences. A total of 183 subjects were selected using Krejcie and Morgan tables (21).

Accordingly, the interdisciplinary education perception scale (IEPS) was used to collect the required data. The scale was first designed by Luecht et al. (1990) to measure the attitude toward interprofessional collaboration. The IEPS consists of 18 items that measure perceptions towards interprofessional education using a Likert scale to score "competency and authority," "perceived need for cooperation," "perception of actual cooperation," and "understanding others' values" (22). Next, the questionnaire was translated into Persian and verified by two English translators. Then, the opinions of experts in the field of educational sciences and medical education were obtained in order to confirm its content and validity.

In this study, the reliability of IEPS was confirmed using internal consistency methods and Cronbach's alpha coefficient (0.89). Moreover, the reliability of this scale was previously reported by Luecht et al. as 0.87 (22). The lowest and highest scores for each item were 1 (I totally disagree) and 5 (I totally agree). Accordingly, the highest and lowest points were considered 140 and 28, respectively. Next, the respondents were asked to express their opinions on a five-point Likert scale (I totally agree, agree, to some extent agree, I disagree, and I totally disagree). The researchers visited medical and educational hospitals and faculties to collect the required data. The research objectives were explained, and the participants were informed that their involvement in the study was voluntary and that completion of the questionnaire was considered their agreement to participate in the research. The questionnaires were then personally delivered to the faculty members, who anonymously completed the questionnaires. Finally, the participants were assured that the information would remain confidential.

After collecting the questionnaires, the data were analyzed in terms of descriptive statistics (frequency, mean and standard deviation) and analytical statistics (t-test, independent t-test, and analysis of variance (ANOVA)), using SPSS Software (Version 20, IBM Corporation, Armonk, NY, USA). Finally,  $P \leq 0.05$  was considered significant.

## 3. Results

In the present study, 66% of the participants were male and 34% were female. Moreover, 14.6% of the participants had interprofessional education experience, and

85.4% lacked experience. Furthermore, 53.5% of the participants belonged to the Faculty of Medicine and 12.5% were from the faculty of pharmacy. In addition, 15.3% of the participants were active in the faculty of nursing and midwifery, 10.4% were from the faculty of public health, and 8.3% belonged to the faculty of paramedical Sciences. With regard to educational experience, 20.8% of participants had 1-5 years of experience, 22.2% had 6 - 10 years, 16.7% had 11 - 15 years, 9.0% had 16 - 20 years, and 31.2% had 21 - 30 years.

The mean and standard deviation of perceptions among faculty members towards interprofessional education and its components are shown in [Table 1](#). Since the responses were based on the five-point Likert scale, the hypothesized mean score in the current study was considered as 3. The mean and standard deviation of perceptions among faculty members towards interprofessional education was  $3.71 \pm 0.44$  ([Table 2](#)). The independent t-test was used to express the difference between the mean score of two groups of male and female faculty members. The results showed that there was no significant difference between the perceptions of female and male faculty members towards interprofessional education ( $P = 0.104$ ).

The independent t-test was used to investigate the relationship between interprofessional education experience and perception of interprofessional education. Based on the data shown in [Table 3](#), it was concluded that there was no significant difference between faculty members with interprofessional education experience and faculty members without experience ( $P = 0.366$ ). The only significant difference was observed in the competency and authority component ( $P = 0.039$ ). The mean of competency and authority component (among faculty members) had more members with interprofessional education experience.

ANOVA was used to determine the differences in the mean scores of perceptions among faculty members towards interprofessional education according to educational experience. The results ([Table 4](#)) showed that there was a significant difference in the perception of interprofessional education ( $P < 0.001$ ) according to history of educational experience. As the data in [Table 4](#) show, the mean score for professors with a history of over 20 years of experience was higher than the mean score for those with a history of less than 5 years of experience. The faculty members with more educational background had a more positive attitude towards interprofessional education.

#### 4. Discussion

Professors are among the main elements in interprofessional education and their positive attitude is necessary

for the implementation of this educational method. Curran, Sharpe and Forristall (2007) conducted a study and argued that attitudes among faculty members were a component of regular assessment activities when introducing interprofessional education in an academic setting (23). The present study was conducted to investigate attitudes among faculty members towards interprofessional education using the IEPS questionnaire. This scale evaluated attitudes among faculty members towards interprofessional education.

The results of this study showed that the mean score of attitudes among faculty members in all faculties of Mazandaran University of Medical Sciences towards interprofessional education and its components (competency and authority, perceived need for cooperation, perception of actual cooperation and understanding others' values) was above average. Accordingly, it was concluded that the professors were ready to enter the field of interprofessional education. In this line, Bennett, Gum, Lindeman, Lawn, McAllister and Richards (2011) conducted a study and their findings suggested that faculty members had a positive attitude towards interprofessional education. However, there were various obstacles to its implementation (24).

Dallaghan, Hoffman, Lyden and Bevil (2016) performed research on more than 285 faculty members from different faculties and concluded that the professors had a positive attitude toward interprofessional education. Moreover, they stated that the concept of attitude did not prevent the implementation of interprofessional education activities and that lack of participatory planning was the most common obstacle in this domain (1). Similarly, Giordano, Umland and Lyons (2012) argued that professors had positive attitudes toward interprofessional education (25). The results of these studies (1, 24, 25) were consistent with the results of the present study.

In the present study, perceptions among faculty members with regard to interprofessional education showed a significant correlation according to different faculties. The mean score for perception of interprofessional education among members of the faculty of nursing and midwifery was higher than that of members of other faculties, and the former professors had a more positive attitude in this regard. In the same vein, Curran, Sharpe and Forristall (2007) conducted a study and found that the mean score of the perception of faculty members of the Faculty of Nursing and Midwifery towards interprofessional education was much higher than that of the faculty of medicine (23). Jasemi, Aghakhani, Hosseini and Eghtedar (2013) undertook a similar study and concluded that nurses had a more positive viewpoint towards interprofessional collaboration. Thus, the results of these studies (23, 26) were similar to the findings of this study.

**Table 1.** The Mean of Perceptions Among Professors Towards Interprofessional Education and Its Components

Variable	Mean $\pm$ Standard Deviation	Female	Male	P Value	T
Perception of interprofessional education	3.71 $\pm$ 0.44	3.79 $\pm$ 0.51	3.66 $\pm$ 0.40	0.104	-1.635
Competency and authority	3.77 $\pm$ 0.49	3.84 $\pm$ 0.61	3.74 $\pm$ 0.41	0.263	-1.124
Perceived need for cooperation	3.99 $\pm$ 0.57	4.07 $\pm$ 0.61	3.95 $\pm$ 0.55	0.263	-.124
Perception of actual cooperation	3.72 $\pm$ 0.63	3.86 $\pm$ 0.58	3.64 $\pm$ 0.64	0.540	-1.940
Understanding others' values	3.34 $\pm$ 0.43	3.39 $\pm$ 0.40	3.31 $\pm$ 0.45	0.328	-0.981

**Table 2.** The Mean of Perceptions Among Faculty Members Towards Interprofessional Education and Its Components According to Faculty

Variable	Faculty					P Value	F
	Medicine	Pharmacy	Nursing and Midwifery	Public Health	Paramedical Sciences		
Perception of interprofessional education	3.70 $\pm$ 0.43	3.52 $\pm$ 0.17	3.94 $\pm$ 0.58	3.63 $\pm$ 0.38	3.73 $\pm$ 0.44	0.037 <sup>a</sup>	2.63
Competency and authority	3.76 $\pm$ 0.46	3.66 $\pm$ 0.30	3.98 $\pm$ 0.69	3.73 $\pm$ 0.39	3.67 $\pm$ 0.49	0.229	1.42
Perceived need for cooperation	4.05 $\pm$ 0.50	3.52 $\pm$ 0.55	4.09 $\pm$ 0.68	4.01 $\pm$ 0.57	4.04 $\pm$ 0.58	0.007 <sup>a</sup>	3.72
Perception of actual cooperation	3.69 $\pm$ 0.65	3.48 $\pm$ 0.29	4.07 $\pm$ 0.72	3.55 $\pm$ 0.60	3.72 $\pm$ 0.63	0.023 <sup>a</sup>	2.94
Understanding others' values	3.31 $\pm$ 0.39	3.20 $\pm$ 0.57	3.54 $\pm$ 0.41	3.20 $\pm$ 0.37	3.55 $\pm$ 0.41	0.021 <sup>a</sup>	2.99

<sup>a</sup>Significant difference.**Table 3.** The Mean and Standard Deviation of Perception Among Faculty Members Towards Interprofessional Education and Its Components According to Interprofessional Education Experience

Variable	Interprofessional Education Experience		P Value	T
	Yes	No		
Perception of interprofessional education	3.79 $\pm$ 0.75	3.69 $\pm$ 0.40	0.356	0.927
Competency and authority	3.98 $\pm$ 0.71	3.74 $\pm$ 0.43	0.039 <sup>a</sup>	2.080
Perceived need for cooperation	4.02 $\pm$ 0.74	3.99 $\pm$ 0.54	0.815	0.235
Perception of actual cooperation	3.74 $\pm$ 1.01	3.71 $\pm$ 0.54	0.838	0.205
Understanding others' values	3.23 $\pm$ 0.70	3.36 $\pm$ 0.37	0.326	-1.216

<sup>a</sup>Significant difference.**Table 4.** The Mean of Perceptions Towards Interprofessional Education and Its Components According to Educational Experience

Variable	Educational Experience, Y					P Value	F
	1 - 5	6 - 10	11 - 15	16 - 20	More than 20		
Perception of inter-professional education	0.39 $\pm$ 3.40	0.42 $\pm$ 3.80	0.29 $\pm$ 3.71	0.42 $\pm$ 3.58	0.45 $\pm$ 3.88	> 0.001 <sup>a</sup>	6.95

<sup>a</sup>Significant difference.

Curran, Sharpe and Forristall (2007) indicated that the mean scores of female faculty members and professors who had some interprofessional education experience were higher than those of other faculty members (23). This finding contradicted the results of this study. In the present study, there was no significant difference between

the perceptions of interprofessional education and faculty members' gender and educational experience. In fact, only the mean score of competency and authority components in professors who had some interprofessional education experience was higher than that of other professors.

The results of this study indicated that there were

significant differences in perception towards interprofessional education among professors according to their history of educational activity. In fact, the scores of professors with more than 20 years of experience were higher than those of other professors. This finding was in line with the results of studies conducted by Jasemi, Aghakhani, Hosseini and Eghtedar (2013) and Yildirim, Ates, Akinci, Ross, Selimen and Issever (2005). They concluded that increased years of educational experience led physicians to adopt a more positive viewpoint towards interprofessional collaboration (26, 27). In fact, planners can make use of the ability of faculty members with more educational background to develop interprofessional education. In general, studies indicate that faculty members have positive attitudes towards interprofessional education. Regarding readiness for interprofessional learning among students, several studies indicated that students generally had positive attitudes. For example, Irajpour, Barr, Abedi, Salehi and Changiz (28), Yamani, Jafaei Delouie, Irajpour and Jarahi (29), Alizaeh, Nasiri Partovi and Ghani Afshord (30), Hertweck, Hawkins, Bednarek, Goreczny, Schreiber and Sterrett (31), Giordano, Umland and Lyons (25), Coster et al. (32), Lestari, Stalmeijer, Widyandana and Scherpbier (33), Zeeni et al. (34) and Wong et al. (35) conducted similar studies. At the experimental level, most students positively assessed their participation in interprofessional education (36-40).

Considering the positive outcomes of interprofessional education, such as enhancing problem-solving skills and clinical decision-making, improving the quality of healthcare, improving patient safety, promoting communication skills, and enhancing the perception of different roles for professionals in the healthcare setting, as well as the positive attitudes of students and professors in this study, it is suggested that planners in the field of medical education investigate strategies and remove obstacles to implementation of interprofessional education in order to pave the way for its adoption in this domain.

#### 4.1. Conclusions

Professors and students are the key components of any educational system and their attitudes play an important role in the success of any educational program. The positive attitude of faculty members towards interprofessional education in the present study and the readiness of students for interprofessional learning in other studies suggest a very favorable environment for implementing interprofessional education in universities. Medical education authorities should examine the barriers and pave the way for acceptance of interprofessional education in order to properly implement this educational method.

## Supplementary Material

Supplementary material(s) is available [here](#) [To read supplementary materials, please refer to the journal web-site and open PDF/HTML].

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